

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-021724**Date Inspected:** 12-Mar-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Items Observed**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A). Field Splice W10/W11

B). Lifting Lug Hole

A). Field Splice W10/W11

The QAI observed the Submerged Arc Welding (SAW) process of the bottom plate field splice identified as Weld Number (WN): 10W-11W-D1. The welding was performed by the James Zhen ID-6001 utilizing Submerged Arc Welding (SAW) process as per the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The WPS was also utilized by the Quality Control (QC) inspector, Steve Jensen, to monitor the welding and to verify of the Direct Current Electrode Positive (DCEP) welding parameters during the Complete Joint Penetration (CJP) groove welding of the field splice. The QAI observed the QC inspector verifying the welding parameters and were noted as follows: 568 amps, 32.4 volts, a travel speed measured at 400 mm per minute (mm/m) and the calculated heat input of 2.76 kJ/mm. The minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract documents.

Later in the shift, the QAI observed the Submerged Arc Welding (SAW) process of the deck plate field splice identified as Weld Number (WN): 10W-11W-A, segments A3 to A1. The welding was performed by the Dan Ieraci ID-3232 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The WPS

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was also utilized by the Quality Control (QC) inspector, Pat Swain, to monitor the welding and to verify of the Direct Current Electrode Positive (DCEP) welding parameters during the Complete Joint Penetration (CJP) groove welding of the field splice. The QAI observed the QC inspector verifying the welding parameters and were noted as follows: 568 amps, 32.5 volts, a travel speed measured at 396 mm per minute (mm/m) and the calculated heat input of 2.79 kJ/mm. The minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract documents.

The QAI also observed the CJP welding of the bottom plate splice identified as WN: 10W-11W-D2. The welding was performed by the welder Jin Pei Wang ID-7299 utilizing the Flux Cored Arc Welding (FCAW) process as per the Welding Procedure Specification (WPS) ABF-WPS-D15-3040A-1, Rev.0. The average welding parameters were verified and recorded as 280 amps, 24.5 volts with a travel speed measured as 350 mm/m. The WPS was also utilized by the QC inspector, Steve Jensen, as a reference to verify the amperage and to monitor the welding. The minimum preheat temperature of 60 degrees Celsius and the interpass temperature of 230 degrees Celsius appeared to comply with the contract documents.

B). Lifting Lug Hole

The QAI performed an Ultrasonic Test (UT) and a Magnetic Particle Test (MPT) on the CJP welds identified as WN: 4W-PP27-W3-Weld No's. 1, 2, 3 and 4 and 5W-PP31-W3-Weld No's. 1,2 and 3. The areas were tested 10% to verify that the welds and testing by QC meet the requirements of the contract documents. The examination was performed as per the contract documents and a ultrasonic test report, TL-6027 and a TL-6028 was generated on this date.

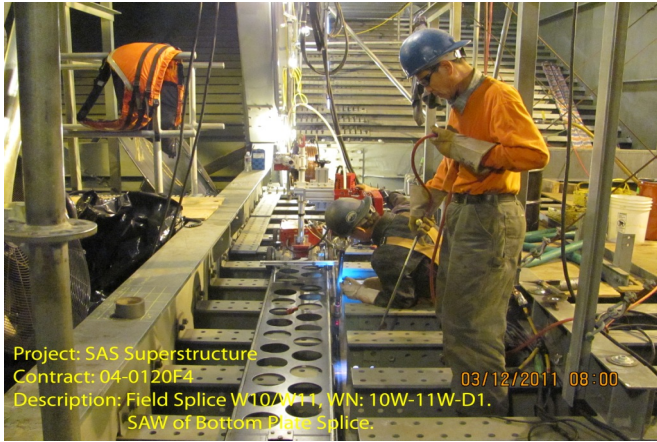
QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspectors utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the SMAW welding process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs on page 3 of this report illustrate some of the work observed during this scheduled shift.

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Summary of Conversations:

There were general conversations with Senior Quality Control Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of American Bridge/Fluor welding, inspection and N.D.E. testing personnel scheduled for this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Reyes,Danny

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer